AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) Injector~~, in particular~~ for use as a fuel injection valve of motor vehicles, ~~with~~ comprising a piezoelectric actor body ~~(1), especially in a multilayer design, of which the~~ having a jacket surface [[is]] surrounded by an injector housing [[(9)]], maintaining an intermediate space and [[is]] cooled by direct contact with an inert fluid which does not conduct electricity[[.]]

~~characterized in that~~ , wherein

in the injector housing [[(9)]] a fluid space is formed filled with a heat coupling fluid [[(6)]] except for an air reservoir [[(7)]], whereby the actor body [[(1)]] is in direct contact with the fluid [[(6)]] over at least part of its length which removes the actor heat in a lateral direction from the actor body [[(6)]] and whereby the volume of the air reservoir [[(7)]] is at least as large as to allow the expansion of the heat coupling fluid [[(6)]] which occurs at the highest operating temperature of the actor body [[(1)]].

2. (currently amended) Injector according to Claim 1, wherein

~~characterized in that~~ the space forms at least a part of the fluid area and is filled over at least part of its length with the fluid [[(6)]] and [[that]] in the injector housing [[(9)]] a separation facility [[(5)]] is provided in the area of ~~the~~ a valve-side end of the actor housing [[(1)]] so that it seals the fluid-filled part of the fluid space against a space adjacent to the injector valve [[(V)]] in the injector housing [[(9)]].

3. (currently amended) Injector according to Claim 2, wherein

~~characterized in that~~ the actor body [[(1)]] is incorporated into a tubular spring [[(2)]] located in the space and is pretensioned by this, whereby the fluid [[(6)]] forms a heat conducting bridge through [[the]] openings of the tubular spring [[(2)]] between the actor body [[(1)]] and the injector housing [[(9)]].

4. (currently amended) Injector according to Claim 1, wherein

~~characterized in that~~ the actor body [[(1)]] is incorporated into an axial encapsulation [[(14)]] positioned in the space which divides the space into an actor internal space and an actor external space [[(17)]] hydraulically sealed against it, whereby the actor internal space forms at least a part of the fluid space

and is filled with fluid [[(6)]] over at least a part of its length.

5. (currently amended) Injector according to Claim 4, wherein ~~characterized in that~~ the actor external space [[(17)]] is filled over at least a part of its length with a second heat coupling fluid [[(6)]].

6. (currently amended) Injector according to Claim 5, wherein ~~characterized in that~~ a dynamic hydraulic bearing [[(16)]] rigidly supporting the actor body [[(1)]] on [[the]] a side away from the valve needle [[(V)]] is provided, [[that]] the hydraulic support [[(16)]] and actor external space [[(17)]] are hydraulically connected and are filled with a hydraulic liquid serving as a second heat coupling fluid, and [[that]] a sealing element [[(5)]] is provided in which the actor external space [[(17)]] is sealed against a space adjacent to the injector valve (V) in the injector housing [[(9)]].

7. (currently amended) ~~Method~~ Injector in accordance with ~~one of the Claims 4 to 6,~~ claim 4, wherein

characterized in that the encapsulation is formed by an axially flexible metal bellows [[(14)]] and that the actor body [[(1)]] is pretensioned by this.

8. (currently amended) ~~Method~~ Injector in accordance with ~~one of the Claims 1 to 7,~~ claim 1, wherein ~~characterized in that~~ the actor body [[(1)]] is in direct contact with the fluid [[(6)]] over its entire length and [[that]] the volume of the air reservoir [[(7)]] is connected without any hydraulic restriction with the fluid-filled part of the fluid space.

9. (currently amended) Injector according to Claim 8, wherein ~~characterized in that~~ an elastic membrane is provided between the air reservoir [[(7)]] and the fluid-filled part of the fluid space.

10. (currently amended) ~~Method~~ Injector in accordance with ~~one of the Claims 1 to 9,~~ claim 1, wherein ~~characterized in that~~ the injector housing [[(9)]] features holes for ~~the~~ electrical connecting leads [[(15)]] of the actor and [[that]] at least one of these holes is provided as a filling channel [[(18]]) for the fluid space.

11. (currently amended) ~~Method~~ Injector in accordance with ~~one of the Claims 1 to 10,~~ claim 1, wherein the ~~characterized in that a~~ heat coupling fluid ~~(6) with~~ has a high dielectric constant ~~is provided~~.

12. (new) Injector in accordance with claim 1, wherein the piezoelectric actor body has multiplayer design.